



Long-term Stewardship for Contaminated Areas on the Oak Ridge Reservation

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What is Stewardship?

Acceptance of the responsibility and the implementation of activities necessary to maintain long-term protection of human health and the environment from hazards posed by residual radioactive and hazardous materials.



The Role of the ORSSAB in the Development of a Long-term Stewardship Program

- 1996 – DOE asked the SSAB to convene a citizen's group to provide input to end uses of the contaminated areas
- 1997 – End Use Working Group formed; EUWG report published in 1998
- 1997 – Stewardship Committee formed and first Long-term Stewardship Report published in 1998
- 1998 – Stewardship Working Group formed and second report published in 1999



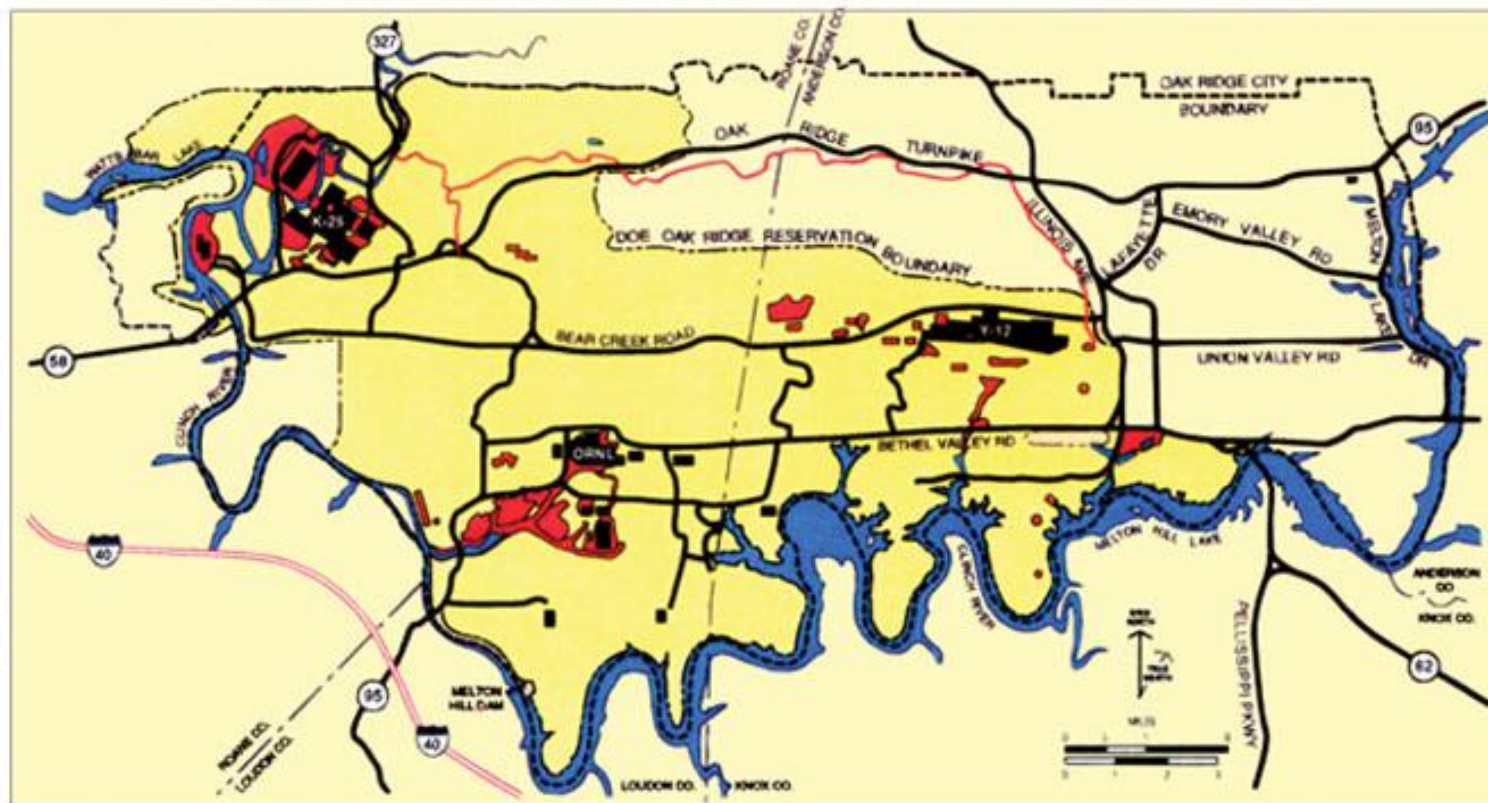
The Role of the ORSSAB in the Development of a Long-term Stewardship Program (continued)

- 2000 to Present – the SSAB Stewardship Committee has provided DOE with (1) a draft Strategic Plan for Long-term Stewardship (finalized in October 2003); (2) a draft annotated outline for a Long-term Stewardship Implementation Plan; and (3) a Long-term Stewardship education kit for use by the local schools
 - The Stewardship Committee reviews the annual Remediation Effectiveness Report and other documents and participates in the 5-year review site visits



Contaminated Areas on the Oak Ridge Reservation

CONTAMINATED AREAS ON THE OAK RIDGE RESERVATION

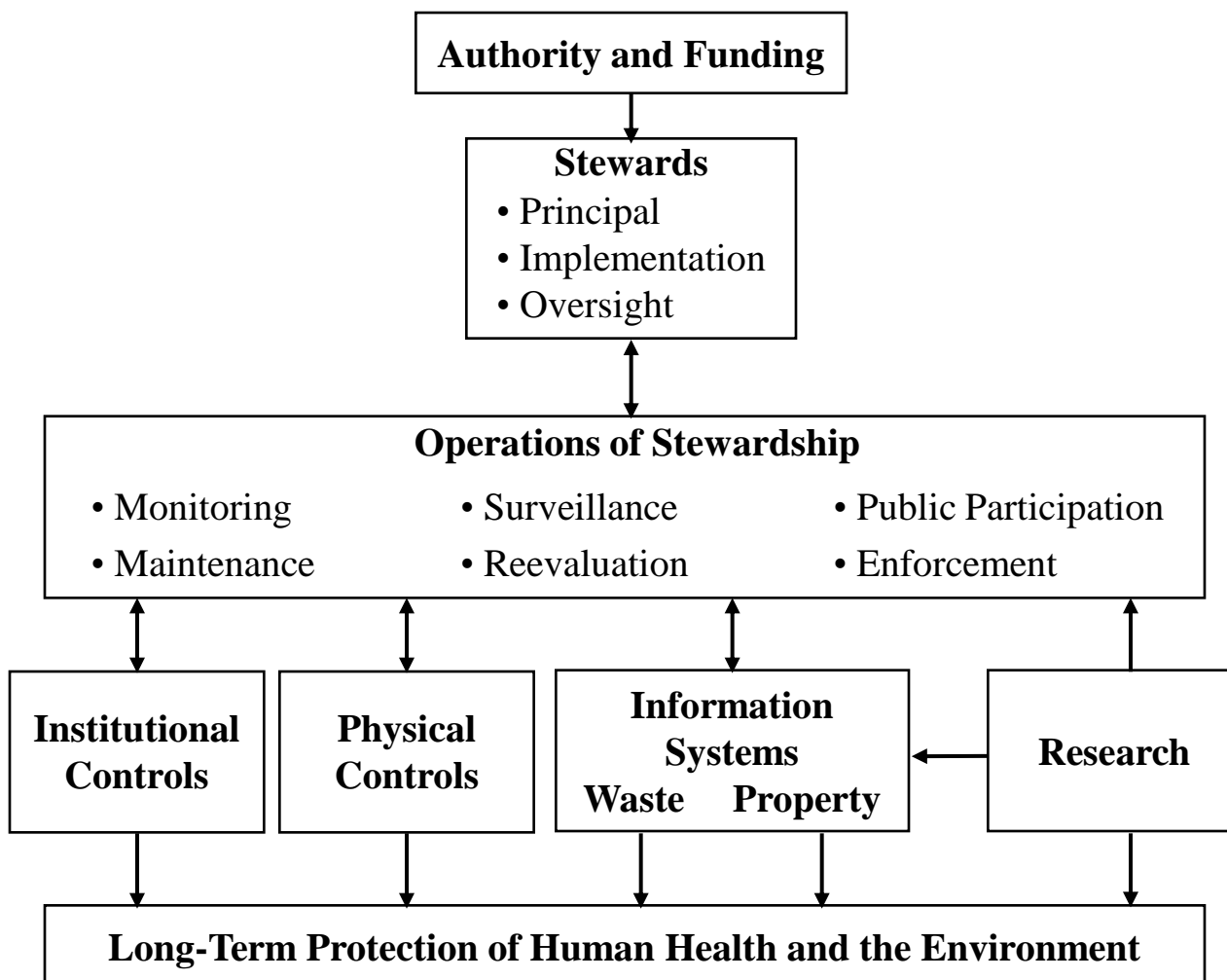


LEGEND

- Areas of contamination
- Areas not contaminated



Organization of Stewardship Elements





Status of Remediation and Long-term Stewardship

- Remediation studies mostly completed
- Remediation underway in all watersheds
- Anticipate completion by 2039
- Draft DOE Oak Ridge Stewardship Implementation Plan undergoing DOE review
- Next CERCLA 5-Year Review of Remediation in 2011



What are the major issues?

- Radioactive and chemically hazardous waste from the Manhattan Project and Atomic Energy Commission (AEC) Cold War activities is found on about 5% of the Reservation (i.e., about 1,850 acres)
- While some hazardous contamination has been removed, much of it will remain buried in place and in the soil and water
- Many of the contaminants are very long-lived and the remediated sites will require long-term stewardship
- To date, DOE HQ has not developed/approved a long-term stewardship strategic plan, policy and guidance.



What are the major issues? (continued)

- There is no DOE HQ liaison for long-term stewardship
- Currently, there is no landlord (i.e., science program) participation in long-term stewardship planning/implementation
- There is no DOE HQ long-term stewardship planning for ongoing-mission sites (consistency in planning for these sites would be a cost/benefit plus)
- There is no public input to HQ decision making for long-term stewardship



Summary of the Next Steps for Stewardship

- Acceptance of the *responsibility* for long-term stewardship
- Development of a national *policy*
- Establishment of a legal mandate for stewardship *funding* separate from remediation funding



Summary of the Next Steps for Stewardship (continued)

- Development of a better understanding of the *tradeoffs* between cleanup and stewardship
- Development of guidance for site-specific stewardship *plans and implementation*
- *Involvement of stakeholders and city government*
- Systems of retention of information for use by future generations



What can the public do to ensure Long-term Stewardship?

- Understand the issues
- Dispel misinformation
- Ensure that the condition of Oak Ridge Reservation land is properly documented (e.g., property transfers, maps, future land use planning)
- Encourage city participation and oversight of the long-term stewardship program
- Participate in local organizations to ensure that stewardship stays on track and the needs of citizens are met
- Encourage local schools to use the LTS kit for their civics or environmental sciences classes so that students understand contamination on the Reservation



Some Major Known Contaminants on the Oak Ridge Reservation

CATEGORY	BEAR CREEK VALLEY	BETHEL VALLEY	EAST TENNESSEE TECHNOLOGY PARK	MELTON VALLEY	UPPER EAST FORK POPLAR CREEK
Contaminated Groundwater	uranium-235, uranium-238, nitrates	strontium-90, uranium, VOCs	TCE, PCE, TCA	strontium-90, tritium, VOCs	VOCs, nitrates, uranium-238, technetium-99
Contaminated Surface Water and Sediments	uranium, cadmium, nitrates	strontium-90, mercury, cesium-137	uranium-238, nickel, PCBs	tritium, strontium, cesium-137	metals, PCBs, radium & SVOCs in sediment
Contaminated Soils	uranium-235, uranium-238	cesium-137, mercury	uranium-238, nickel, PCE	cesium-137, PCBs, mercury, cobalt-60	mercury, uranium-238, radium-226, cesium-137 (low levels); PCBs, technetium-99
Buried Waste	uranium-235, uranium-238	strontium-90, cesium-137, cobalt-60, metals	uranium-238, PCE, TCE	strontium-90, tritium, transuranics, mixed waste	uranium-238, metals, VOCs, SVOCs, nitrates
Engineered Disposal Facilities	EMWMF low-level waste	None	none	low-level waste, strontium, tritium	non-hazardous solid waste landfills on Chestnut Ridge
Containers in Storage	VOCs, PCBs	uranium-233	low-level waste, uranium, hexafluoride, PCBs	transuranic waste	Uranium oxide vaults; uranium-235 in storage, uranium hexafluoride
Contamination in Structures in Use	None	strontium-90; cesium-137	uranium-238, PCBs	transuranic and low-level waste	mercury; uranium; isolated beryllium
Contamination in Abandoned Structures	None	strontium-90, cesium-137	uranium-235, uranium-238, technetium-99, PCBs	low-level waste	mercury, uranium

EMWMF = Environmental Management Waste Management Facility

VOC = Volatile Organic Compound

TCE = Trichloroethene

TCA = Trichloroethane

SVOC = Semi-Volatile Organic Compound

PCE = Tetrachloroethene

PCB = Polychlorinated Biphenyl



Waste Areas at ETTP BEFORE & AFTER Remediation



K-1070A Before

K-1070A After





Waste Areas at Bear Creek Valley BEFORE & AFTER Remediation



S-3 Pond Before

S-3 Pond After





Waste Areas at Melton Valley BEFORE & AFTER Remediation

Solid Waste Storage Area (SWSA)

SWSA-4 After



SWSA-4 Before

